**Walking Challenge**  
**Description:** This is a game that encourages users to reduce their carbon emissions by walking. Users are required to walk at least 3 kilometers on campus and use GPS to check in. The system automatically records the distance walked and rewards users with 30 points when they reach their goals to raise awareness of sustainable mobility.

**User Story (if applicable):**  
*"As a user, I want to record my walking distance via GPS and get rewarded, so that I can be a part of sustainable mobility and reduce carbon emissions."*

**1. Acceptance Criteria**

Define what needs to be met for this item to be considered **complete**.

✅ After clicking the “START” button, users can begin the challenge by tracking the walking distance with GPS.

✅ The system can accurately track the user’s walking distance and use GPS to check in.

✅ When the user has walked 3 kilometers, the system will detect and determine that the user has completed the task.

✅ Users can see their walking progress in the game’s progress screen.

✅ Option1: When the user walks enough 3 kilometers, the system will automatically jump to the result page. / Option2: When the user has reached 3 km, the user can click the “Finish” button to end the challenge and jump to the settlement page.

✅ The system needs to prevent cheating by users, such as the user of transportation, by detecting whether the speed is abnormal.

**2. Requirements & Specifications**

Provide clear **functional** and **non-functional** details.

* **Functional:**

The system should track the user’s walking distance via GPS.

Users are required to perform the walking challenge within the specified range, and the distance beyond the specified range is not counted. (option)

Users can view their current walking progress on the game progress page.

After completing the task, the user can see the result page and get 30 points. At the same time, the system updates the user’s points and the leaderboard.

If the user is in the middle of the challenge and the system detects cheating, the system will pop up a prompt and end the distance tracking, and the user will click to quit the game.

If users do not want to continue the challenge, they can actively click to exit the challenge.

* **Non-functional:**

GPS tracking should have low latency to ensure that walking progress is updated in real time.

The system should be able to effectively distinguish between walking speed and non-walking speed to avoid cheating.

**Optional:** Include wireframes or process flow diagrams.

**3. Dependencies & Constraints**

* Users must enable GPS and authorize the app to access location information.
* A stable network connection is required to support real-time walking data upload.
* The system should have the speed detection function to distinguish between walking and non-walking modes to avoid cheating.
* Data privacy regulations are followed to ensure the security of user location information.

**4. GWT**

Provide Given-Then-When for main cases and edge cases.

**Scene1:** Users successfully complete the 3 kilometers task

**Given:** The user enables GPS, starts the task challenge, and starts walking within the specified range.

**When:** The user walks up to 3 kilometers within the specified range.

**Then:** The system determines that the user has completed the task, rewards the user with 30 points and updates the user’s total points and leaderboard.

**Scene2:** Users have not completed the 3 kilometers walk at one time

**Given:** The user starts the challenge but wants to stop before the walk reaches 3 kilometers.

**When:** The user exists the game.

**Then:** The user’s current progress is invalid.

**Scene3:** Cheating behavior has occurred

**Given:** The user is moving at an abnormal speed.

**When:** The system detects an abnormal speed.

**Then:** The system gives the prompt, and the user’s current progress is invalid, click to quit the game.

**Scene4:** Users denies GPS access

**Given:** The user has not authorized GPS access.

**When:** The user tries to start the task challenge.

**Then:** The user is unable to start the task, and the system will prompt that GPS access is required.